



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/686,417	10/11/2000	Johannes Stollenwerk	HER07 P-441	6074

7590

11/07/2002

James a Mitchell  
695 Kenmoor SE  
Post Office Box 2567  
Grand Rapids, MI 49501

EXAMINER

FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
----------	--------------

1774

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/686,417

Applicant(s)

STOLLENWERK ET AL.

Examiner

Lawrence D Ferguson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 21-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Reconsideration Request***

1. This action is in response to the response for reconsideration mailed August 10, 2002. Claims 1-11 and 21-25 are pending.

***Claim Rejections – 35 USC § 103(a)***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-11 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Depauw et al. (U.S. 5,110,662) in view of GB 2126256 A in further view of Applicant's own admission.
4. Depauw discloses a conductive transparent layer system with two oxide layers and a silver layer interposed between them on a substrate with a thickness of less than 100nm (abstract and column 9, lines 30-65) where the resistivity can be readily reduced by increasing the thickness of the layers (column 9, line 66 through column 10, line 4) where the multilayered system has a high transmission of up to 89%. Depauw discloses the silver layer is less than 20nm and the two oxide layers are less than 50nm thick (abstract and column 9, lines 53-62). Although Depauw does not disclose a mean

Art Unit: 1774

(abstract and column 9, lines 53-62). Although Depauw does not disclose a mean Haacke quality factor, one of ordinary skill in the art can achieve this value utilizing the surface resistivity and transmittance disclosed by the reference.

The reference does not explicitly disclose the exact surface resistivity as applicant. However, Depauw explicitly teaches how to adjust the surface resistivity as desired. It is further noted on page 2 of Applicant's specification at lines 24-27 that "it is also known that through selective choice of materials and coating parameters, transparent, conductive layer systems can be produced which have a resistivity of 2.93 sq,...". Since Depauw teaches how to adjust the surface resistivity and applicant acknowledges that it is known how to arrive at the required values, applicant's invention would be obvious to one of ordinary skill in the art. Depauw does not disclose cerium oxide, copper or sputtering techniques. "Deposited by means of pulsed DC sputtering or AC-superimposed DC sputtering" is a product-by-process. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 227 USPQ 964, 966.

GB '256 teaches a layer system with two dielectric films and a metallic film on a transparent substrate with the dielectric film formed from an oxide of cerium and indium with the metallic film composed mainly of silver and copper (abstract). GB '256 teaches good transmittance in the visible light range, especially in the 370-780 nm wavelength

Art Unit: 1774

(page 1, lines 80-82). GB '256 teaches forming the layer system by magnetron sputtering (page 4, lines 7-8). Although the reference does not teach the percentages of the indium, cerium or copper in the multilayer system, weight percentage has a direct effect on the transparency and is therefore optimizable as taught by GB '256. Depauw and GB '256 are analogous art because they are from the same field of multilayer systems with a silver layer.

It would have been obvious to one of ordinary skill in the art to include the cerium oxide with the indium oxide and the copper with the silver in the layer system of Depauw to sustain the conductivity of the layer system. It would additionally be obvious to one of ordinary skill in the art to include the wavelength ranges taught by GB '256 in the multilayered system of Depauw because both references have high transmittances and GB '256 further supports this feature by teaching the wavelengths for the high transmittance. Neither reference disclosed the transparency value as disclosed by applicant. Because the combined references contain the same materials as applicant, the transparency value would be expected to be the same, absent any evidence to the contrary.

### ***Response to Arguments***

5. Applicant's remarks to rejection under 35 USC 103(a) as being unpatentable over Depauw et al. (U.S. 5,110,662) in view of GB 2126256 A has been considered and found to be unpersuasive. Applicant argues neither reference teaches or suggest a conductive transparent layer system having the required surface resistivity and mean

Art Unit: 1774

Haacke quality factor. Depauw discloses a conductive transparent layer system with two oxide layers and a silver layer interposed between them on a substrate with a thickness of less than 100nm (abstract and column 9, lines 30-65) where the resistivity can be readily reduced by increasing the thickness of the layers (column 9, line 66 through column 10, line 4). Although Depauw does not disclose a mean Haacke quality factor, one of ordinary skill in the art can achieve this value utilizing the surface resistivity and transmittance disclosed by the reference. The reference does not explicitly disclose the exact surface resistivity as applicant. However, Depauw explicitly teaches how to adjust the surface resistivity as desired. It is further noted on page 2 of Applicant's specification at lines 24-27 that "it is also known that through selective choice of materials and coating parameters, transparent, conductive layer systems can be produced which have a resistivity of 2.93 sq,..." . Since Depauw teaches how to adjust the surface resistivity and applicant acknowledges that it is known how to arrive at the required values, applicant's invention would be obvious to one of ordinary skill in the art. The same conductive transparent system made of the same components would be expected to have the same properties, including mean Haacke quality factor and surface resistivity. Applicant must show the references instantly cited cannot exhibit the claimed features in order to overcome the rejection. Applicant argues the references do not teach or suggest 'adjusting a combination of parameters to achieve the required characteristics of the claimed conductive transparent layer system' and Depauw shows a mean Haacke quality factor below what is claimed and a surface resistivity above 2.9sq. This is not true because Depauw teaches how to adjust the surface resistivity

Art Unit: 1774

and applicant acknowledges that it is known how to arrive at the required values of parameters. Additionally, by adjusting the surface resistivity, the mean Haacke quality factor can also be adjusted.

**6. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

### ***Conclusion***

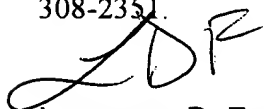
**7.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703) 305-9978. The examiner can normally be reached on Monday through Friday 8:30 AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

Art Unit: 1774

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for

After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)

308-2351.



Lawrence D. Ferguson  
Examiner  
Art Unit 1774

CYNTHIA H. KELLY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

